



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/668,117	09/22/2003	Toshitaka Mori	1300-000003	7649

27572 7590 03/06/2006

HARNESS, DICKEY & PIERCE, P.L.C.  
P.O. BOX 828  
BLOOMFIELD HILLS, MI 48303

EXAMINER

PATEL, ASHOK

ART UNIT PAPER NUMBER

2879

DATE MAILED: 03/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/668,117	<b>Applicant(s)</b> MORI ET AL.	
	<b>Examiner</b> Ashok Patel	<b>Art Unit</b> 2879	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 14 December 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-11 and 13-16 is/are pending in the application.
- 4a) Of the above claim(s) 7-11 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 and 13-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

Art Unit: 2879

1. Applicant's election with traverse of Group I, claims 1-6 and 12, in the reply filed on 12/14/2005, is acknowledged. The traversal is on the ground(s) that Inventions of I and II have not acquired a separate status in the art. This is not found persuasive because, as shown in the restriction requirement, the Groups I and II are shown as distinct by their statutory classifications. Invention I is directed to a product, whereas invention II is directed to a process for producing a display device. The distinctness can not be eliminated by merely reciting process limitations within the product group claim. The process limitations recited within the product claim is not patentable. The statutory classifications for the two groups are separate from each other.

The Examiner noted that applicant did not challenge Examiner's technical alternative process steps recited at page 2 of the restriction requirement.

The requirement is still deemed proper and is therefore made FINAL. Claims 7-11 remain withdrawn from consideration.

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

Art Unit: 2879

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1, 2, 4-6 and 13-16 are rejected under 35

U.S.C. 102(e) as being anticipated by Morii (USPN 6853130).

Regarding amended claims 1, Morii discloses a display element (Fig. 1; col. 1 lines 9-11) including a first electrode (anode 23), a luminescent layer (light-emitting layer 3), a second electrode (first cathode layer or second cathode layer 5 or 6), and a substrate (1), the first electrode having a metal layer (col. 4, lines 24-27; Ni or Ir or Pd) and a corrosion-resistant charge injection acceleration layer.

Amended limitation "wherein said display element is produced by....." have not been given patentable weight as it is a product by process limitation. Even though product-by-process claim is limited by process, determination of patentability is based on the product itself. The patentability of a product does

Art Unit: 2879

not depend on its method of production. If the product in the product-by-process claim is same as or obvious from a product of the prior art, the claim is unpatentable even though the prior art product was made by a different process." MPEP 2113.

Accordingly, no patentable weight is given to process step recited in claim 1.

Regarding claim 2, Morii discloses the display element according to claim 1, wherein the metal layer is formed of a metal selected from the group consisting of chromium, nickel (col. 4 lines 24-27; choose Ni), tungsten, manganese, indium, tin, zinc, molybdenum, vanadium, titanium, tantalum, niobium, and mixture thereof.

Regarding claim 4, Morii discloses the display element according to claim 1, wherein the first electrode reflects not more than 70% of light in the visible region incident through the second electrode side (Table 1; col. 8 lines 48-52). If they are transmitting more than 70% in the visible regions than they do not reflect more than 70%.

Regarding claim 5, Morii discloses the display element according to claim 1, wherein the corrosion-resistant charge injection (col. 4 lines 24-26) accelerating layer has a lower resistivity than the luminescent layer (col. 5 lines 9-11). The examiner notes that one can choose Ir or Pd for the anode. After

Art Unit: 2879

oxygen plasma treatment there will be left an oxide of the particular metal. The examiner notes that Iridium oxide has a  $10^{-6}$  m. The examiner notes that platinum oxide has a resistivity of resistivity of  $49 \times 10^{-6}$  between 100 and 1.000  $\Omega\text{cm}$ . The examiner notes that PPV poly(phenylene vinylene) has a resistivity of  $10^2 \Omega\text{m}$ .

Regarding claim 6, Morii discloses the display element according to any one of claims 1 to 5, which is used as an electroluminescent element (title; col. 1 lines 9-11).

Regarding claims 13-16, the display elements recite process limitations therein, rendering the claims of a product-by-process nature.

4. Claims 1, 3 and 13-16 are rejected under 35 U.S.C. 102(e) as being anticipated by Mishima et al. (USPN 6818325).

Regarding amended claims 1, Mishima et al. discloses a display element (col. 1 lines 5-10) having a first electrode (claim 1), a luminescent layer (claim 1), a second electrode (claim 1), and a substrate (claim 1), the first electrode comprising a metal layer (col. 19 lines 48-62; choose chromium or nickel or mixtures of these metals, alloys) and a corrosion-resistant charge injection acceleration layer.

Art Unit: 2879

Amended limitation "wherein said display element is produced by....." is not given a patentable weight for reasons set forth earlier in this office action.

Regarding claim 3, Mishima et al. discloses a display element according to claim 1, wherein the metal layer includes a laminate (col. 19 lines 48-62; choose chromium and nickel and silver and gold mixtures of these metals, alloys) of one or more alloys and one or more metals. The examiner took the meaning of this claim to be that the alloy laminate have a metal in it from the specification and examples.

Regarding claims 13-16, the display elements recite process limitations therein, rendering the claims of a product-by-process nature. The product-by-process limitations are not given patentable weight for reasons set forth earlier in the rejection of claim 1.

5. Claims 1, 3 and 13-16 are rejected under 35 U.S.C. 102(e) as being anticipated by Hashimoto et al. U.S. Patent Application Publication 2001/0051487 A1.

Regarding amended claims 1, Hashimoto et al discloses a display element (paragraph 66) including a first electrode (claim 1), a luminescent layer (claim 1), a second electrode (claim 1), and a substrate (claim 1), the first electrode

Art Unit: 2879

comprising a metal layer (paragraph 64 anode materials nickel, etc) and a corrosion-resistant charge injection acceleration layer.

Amended limitation "wherein said display element is produced by....." is not given a patentable weight for reasons set forth earlier in this office action.

Regarding claim 3, Hashimoto et al. disclose a display element according to claim 1, wherein the metal layer comprises a laminate (paragraph 64 nickel and other metals and alloys thereof) of one or more alloys and one or more metals. The examiner took the meaning of this claim to be that the alloy laminate have a metal in it from the specification and examples.

Regarding claims 13-16, the display elements recite process limitations therein, rendering the claims of a product-by-process nature. The product-by-process limitations are not given patentable weight for reasons set forth earlier in the rejection of claim 1.

6. Claims 1 and 13-16 are rejected under 35 U.S.C. 102(e) as being anticipated by Kobayashi U.S. Patent 6,869,635.

Regarding amended claims 1, Kobayashi discloses a display element (title) comprising a first electrode (ref. 2), a luminescent layer (light-emitting layer 3), a second electrode



Art Unit: 2879

(5), and a substrate (1), the first electrode comprising a metal layer (aluminum col. 5 line 45-50) and a corrosion-resistant charge injection acceleration layer (col. 5 lines 47-50), the corrosion-resistant charge injection accelerating layer having been formed by subjecting a surface layer in the metal layer to plasma treatment using an oxygen atom-containing gas (col. 5 line 49). Though a named corrosion-resistant charge injection acceleration layer might not be mentioned in the Hashimoto reference, the examiner believes that it is there as it is a result of the plasma treatment using oxygen. The examiner notes that in the applicants' specification page 7 that "The corrosion-resistant charge injection accelerating layer is formed by subjecting a surface of the metal layer formed on the surface of the substrate to plasma treatment (oxidation treatment) using an oxygen atom-containing gas."

Amended limitation "wherein said display element is produced by....." have not been given patentable weight for reasons set forth earlier in this office action.

Regarding claims 13-16, the display elements recite process limitations therein, rendering the claims of a product-by-process nature. The product-by-process limitations are not given patentable weight for reasons set forth earlier in the rejection of claim 1.

Art Unit: 2879

7. Claims 1, 2, 5, 6 and 13-16 are rejected under 35 U.S.C. 102(a) as being anticipated by Hirano WO 02/056641 A1. The examiner will be using US. Patent 6,774,561 as an interpretation of the Hirano WO 02/056641 A1 document as the US Patent claims priority to the Japanese Language WO 02/056641 A1 document.

Regarding amended claims 1, Hirano discloses a display element (title; col. 1, lines 30-31) comprising a first electrode (ref. 2, col. 3 lines 46-50), a luminescent layer (ref. 6c), a second electrode (ref. 7 or 8), and a substrate (ref. 1), the first electrode comprising a metal layer (col. 3 lines 46-50; ref. 2) and a corrosion-resistant charge injection acceleration layer (ref. 3; col. 3 lines 57 and 58; use the same metal to make the oxide layer as that used to make the metal layer).

Amended limitation "wherein said display element is produced by....." is not given a patentable weight for reasons set forth earlier in this office action.

Regarding claim 2, Hirano discloses the display element according to claim 1, wherein the metal layer is formed of a metal selected from the group consisting of chromium, nickel (col. 3 lines 46-50; ref. 2; choose Ni or Ta or Nb), tungsten,

Art Unit: 2879

manganese, indium, tin, zinc, molybdenum, vanadium, titanium, tantalum, niobium, and their mixture.

Regarding claim 5, Hirano discloses the display element according to claim 1, wherein the corrosion-resistant charge injection (abstract; the oxide having a higher conductivity than the organic layer) accelerating layer has a lower resistivity than the luminescent layer (ref. 6; choose the organic layer to only be the emission layer 6c as it writes in the abstract at least an emission layer; therefore choose the least for 6 which is the emission layer 6c).

Regarding claim 6, Hirano discloses the display element according to any one of claims 1 to 5, which is used as an electroluminescent element (col.1 lines 13 and 14).

Regarding claims 13-16, the display elements recite process limitations therein, rendering the claims of a product-by-process nature. The product-by-process limitations are not given patentable weight for reasons set forth earlier in the rejection of claim 1.

8. Claims 1, 2, 4, 6 and 13-16 are rejected under 35 U.S.C. 102(b) as being anticipated by Hirano et al. Japanese Patent Application Publication 2001-043980. The examiner will be using US. Patent 6,831,408 as an interpretation of the Japanese

Art Unit: 2879

Publication as the US Patent claims foreign priority to the Japanese Patent Application.

Regarding amended claims 1, Hirano et al. disclose a display element (title) comprising a first electrode (ref. A; col. 2 lines 49-67 and col. 3 lines 1-6), a luminescent layer (103 AIq), a second electrode (K or 12 or 11), and a substrate (1), the first electrode having a metal layer (A; col. 2, lines 49-67 and col. 3, lines 1-6; choose Ni; or Cr col. 5 lines 50-52) and a corrosion-resistant charge injection acceleration layer (col. 3 lines 1-6; choose a dual layer with Ni as the one layer and NiO or Chromium oxide as the layer closer to the electroluminescent layer).

Amended limitation "wherein said display element is produced by....." is not given a patentable weight for reasons set forth earlier in this office action.

Regarding claim 2, Hirano et al. disclose the display element according to claim 1, wherein the metal layer is formed of a metal selected from the group consisting of chromium, nickel (A; col. 2, lines 49-67 and col. 3, lines 1-6; choose Ni), tungsten, manganese, indium, tin, zinc, molybdenum, vanadium, titanium, tantalum, niobium, and mixture thereof. Regarding claim 4, Hirano et al. disclose the display element according to claim 1, wherein the first electrode reflects not

Art Unit: 2879

more than 70% of light in the visible region incident through the second electrode side (col. 3 lines 45 and 46; choose 41%).

Regarding claim 6, Hirano discloses the display element according to any one of claims 1 to 5, which is used as an electroluminescent element (ABSTRACT).

Regarding claims 13-16, the display elements recite process limitations therein, rendering the claims of a product-by-process nature. The product-by-process limitations are not given patentable weight for reasons set forth earlier in the rejection of claim 1.

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Art Unit: 2879

10. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hirano WO 02/056641 A1 in view of Howard U.S. Patent 6,885,147. The examiner will be using US. Patent 6,774,561 as an interpretation of the Hirano WO 02/056641 A1 document as the US Patent claims priority to the Japanese Language WO 02/056641 A1 document.

Regarding claim 3, Hirano teaches all the limitations of claim 3, but fail to teach wherein the metal layer includes a laminate of one or more alloys and one or more metals. Howard in the analogous art teaches a metal layer electrode comprising a laminate of one or more alloys and one or more metals (col. 7 lines 15-24). choose an alloy of tantalum, chromium and nickel or tungsten). Additionally, Howard teaches incorporation of such a laminate of one or more alloys and one or more metals to improve stability for the anode (col. 7 line 16) and the metal alloys will provide a working OLED (Fig. 4).

Consequently it would have been obvious to a person having ordinary skill in the art at the time the invention was made to use a laminate of one or more alloys and one or more metals in the electrode of Hirano, since such a modification would improve stability of the anode and the metal alloys will provide a working OLED as taught by Howard. When these metal alloys are used in the Hirano reference the examiner notes from the Hirano

Art Unit: 2879

reference from the abstract that the buffer layer is formed from an oxide of the metallic material layer and in this instance that is the alloy and one or more metals of Howard.

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ashok Patel

Art Unit: 2879

whose telephone number is 571-272-2456. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel can be reached on 571-272-2457. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Ashok Patel  
Primary Examiner  
Art Unit 2879